

In the claims:

Please amend the claims as follows:

1. (Original) Apparatus for separating an analyte from a mixture or for detecting an analyte or for determining the affinity, or a property related to affinity, between binding partners comprising:

- a) a surface having the analyte or one of the binding partners immobilised thereon, in use;
- b) a transducer for oscillating the surface;
- c) a controller connected to the transducer for varying the amplitude and/or frequency of the oscillation to cause a dissociation event; and,
- d) an analyser connected to the transducer for detecting an oscillation of the transducer due to the dissociation event;

characterised in that the controller includes an oscillator connected in a resonant circuit with the transducer such that the transducer oscillates at two frequencies simultaneously, one of these causing the transducer to oscillate the surface and the other being supplied as an output to the analyser.

2. (Original) Apparatus according to claim 1, wherein the frequency that is supplied as an output to the analyser is a multiple of the frequency that causes the surface to oscillate.

3. (Original) Apparatus according to claim 2, wherein the frequency that causes the surface to oscillate is the transducer's fundamental resonant frequency and the frequency supplied as an output to the analyser is one of the transducer's overtone frequencies.

4. (Original) Apparatus according to claim 1, wherein the frequency that causes the surface to oscillate is a multiple of the frequency that is supplied as an output to the analyser.

5. (Original) Apparatus according to claim 4, wherein the frequency that causes the surface to oscillate is one of the transducer's overtone frequencies and the frequency supplied as an output to the analyser is the transducer's fundamental frequency.

6. (Currently Amended) Apparatus according to ~~any of the preceding claims~~ claim 1, wherein the oscillation of the transducer due to the dissociation event is at a range of frequencies located around at least one of the transducer's resonant frequencies.

7. (Currently Amended) Apparatus according to ~~any of the preceding claims~~ claim 1, wherein the immobilised analyte or binding partner is a metal, a polymer, a dendrimer, a self-assembled monolayer, a peptide, a protein, an antibody, an antigen, an enzyme, an enzyme inhibitor, a biologically active molecule, a drug, a polynucleotide or a peptide polynucleotide.

8. (Currently Amended) Apparatus according to ~~any of claims~~ claim 1 to 6, wherein the immobilised analyte or binding partner is a cell, a bacterium, a virus, a prion, an amyloid, a proteinaceous aggregate or a phage.

9. (Currently Amended) Apparatus according to ~~any of the preceding claims~~ claim 1, wherein different analytes or binding partners are immobilised at different positions on the surface.

10. (Currently Amended) Apparatus according to ~~any of the preceding claims~~ claim 1, wherein the dissociation event is detected as a motional oscillation.

11. (Currently Amended) Apparatus according to ~~any of the preceding claims~~ claim 1, wherein the transducer is a piezoelectric transducer.

12. (Original) Apparatus according to claim 11, wherein the transducer is a quartz crystal microbalance or surface acoustic wave device.

13. (Original) Apparatus according to claim 11, wherein the transducer comprises zinc oxide, a piezoelectric polymer or a piezo-ceramic.

14. (Currently Amended) Apparatus according to ~~any of claims~~ claim 11 ~~to 13~~, wherein the oscillator is a dual frequency crystal oscillator.

15. (Currently Amended) Apparatus according to ~~any of the preceding claims~~ claim 1, wherein the oscillator comprises two bandpass filters, each having its input connected to the transducer and its output connected to a respective amplifier, the outputs of which are combined by a power adder and supplied to the transducer, the centre frequencies of the bandpass filters corresponding to the two oscillating frequencies of the transducer.

16. (Currently Amended) Apparatus according to ~~any of the preceding claims~~ claim 1, wherein the analyser comprises a ~~radiofrequency~~ radio-frequency detector and a digitiser.

17. (Original) A method for separating an analyte from a mixture or for detecting an analyte or for determining the affinity, or a property related to affinity, between binding partners, the method comprising:

- a) immobilising the analyte or one of the binding partners on a surface;
 - b) oscillating the surface;
 - c) varying the amplitude and/or frequency of the oscillation to cause a dissociation event;
- and,

d) detecting an oscillation due to the dissociation event using an analyser;
characterised by oscillating the surface at two frequencies simultaneously, one of these causing the surface to oscillate and the other being supplied as an output to the analyser for use in detecting the oscillation due to the dissociation event.

18. (Original) A method according to claim 17, wherein the surface is oscillated using a transducer and the frequency that is supplied as an output to the analyser is a multiple of the frequency that causes the surface to oscillate.

19. (Original) A method according to claim 18, wherein the frequency that causes the surface to oscillate is the transducer's fundamental resonant frequency and the frequency supplied as an output to the analyser is one of the transducer's overtone frequencies.

20. (Original) A method according to claim 17, wherein the frequency that causes the surface to oscillate is a multiple of the frequency that is supplied as an output to the analyser.

21. (Original) A method according to claim 20, wherein the frequency that causes the surface to oscillate is one of the transducer's overtone frequencies and the frequency supplied as an output to the analyser is the transducer's fundamental frequency.

22. (Currently Amended) A method according to ~~any of claims~~ claim 17 ~~to 21~~, wherein the oscillation of the transducer due to the dissociation event is at a range of frequencies located around at least one of the transducer's resonant frequencies.

23. (Currently Amended) A method according to ~~either of the preceding claims~~ claim 21, further comprising immobilising different analyses or binding partners at different positions on the surface.

24. (Currently Amended) A method according to ~~any of claims~~ claim 17 ~~to 23~~, further comprising detecting the dissociation event as a motional oscillation.